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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: § Group Art Unit: 2157

Bernard A. Traversat, et al. § Examiner: Nano, Sargon N.

§ Atty. Dkt. No.: 5681-07100

Serial No.: 10/055,097

Filed: January 22, 2002

For: RELAY PEERS FOR EXTENDING PEER AVAILABILITY IN A PEER-TO-PEER NETWORKING ENVIRONMENT

OIPE IAP64 FEB 1 5 2006 PATENT & TRADEMARK OFFICE

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APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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Sir/Madam:

Further to the Notice of Appeal filed December 27, 2005, Appellants present this Appeal Brief. Appellants respectfully request that the Board of Patent Appeals and Interferences consider this appeal.

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I. REAL PARTY IN INTEREST

As evidenced by the assignment recorded at Reel/Frame 012545/0545, the subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and now having its principal place of business at 4150 Network Circle, Santa Clara, CA 95054.

II. RELATED APPEALS AND INTERFERENCES

No other appeals, interferences or judicial proceedings are known which would be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-62 stand finally rejected. The rejection of claims 1-62 is being appealed. A copy of claims 1-62 is included in the Claims Appendix herein below.

IV. STATUS OF AMENDMENTS

No amendments to the claims have been submitted subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed toward a peer computing system including a plurality of peer nodes operable to couple to a network. The plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform that includes one or more peer-to-peer platform protocols for enabling the peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. For example, Appellants' FIGs. 1A and 1B depict various peer devices (104) coupled to a network (106). Appellants' FIG. 2 depicts a conceptual representation of a peer-to-peer

platform software architecture, including several layers: a core layer 120 (including protocols for implementing peer groups 122, discovery 124, communication 126, and monitoring 128), a service layer 140 and an application layer 150. In various embodiments, a peer may be any entity that runs some or all of one or more protocols provided by the peer-to-peer platform core layer, including sensors, servers, PCs, computers up to and including supercomputers, PDAs, manufacturing and medical equipment, phones and cellular phones. In various embodiments, peer nodes may be coupled to any network (wired or wireless), such as IP, Bluetooth, or Havi, among others. *See, e.g.*, page 4, lines 21-26; page 8, lines 9-12; page 16, lines 3-5; and page 17, line 5 – page 18, line 2.

The plurality of peer nodes is partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism. For example, a set of peer nodes may be located on either side of a firewall, or a Network Address Translation (NAT) gateway, in some embodiments. The peer nodes on opposite sides of the partitioning mechanism cannot communicate directly with each other on the network. The peer computing system includes a relay peer node that can be coupled to the network outside the partitioning mechanism. The relay peer node is operable to receive a message from a peer node outside the mechanism that is intended for a peer node inside the mechanism and to relay the message to the peer node inside the mechanism. In some embodiments, the relay peer node may also be operable to receive a message from a peer node inside the partitioning mechanism that is intended for a peer node outside the mechanism and to relay the message to the peer node outside the mechanism. *See, e.g.*, page 8, lines 3-7 and 19-27; page 106, lines 10-26; and FIG. 29.

In some embodiments, the relay peer node may be operable to cache route information describing one or more routes to peer nodes on the network. For example, in different embodiments, the route information may include a list of gateways along the route or a number of network hops to the destination node. The relay peer node may use this cached route information to route messages between a peer node inside the

partitioning mechanism and a peer node outside the partitioning mechanism. In some embodiments, the relay peer node may be operable to receive a query, formatted according to an endpoint routing protocol, requesting route information to one of the peer nodes from another one of the peer nodes, and to send the requested route information to the requesting peer node in accordance with the endpoint routing protocol. In other embodiments, the message itself includes route information, and in order to relay the message to the peer node inside the mechanism, the relay peer is operable to use the route information included in the message to route the received message to the destination peer node. The route information cached by the relay peer node and/or included in the message may include an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node, in some embodiments. *See, e.g.*, page 9, lines 27-24; page 10, line 25 – page 11, line 2; page 97, lines 10-16; page 108, lines 8-9; page 110, lines 9-16 and 21-22; page 111, lines 7-14; and FIGs. 31 and 32.

Independent claim 11 is also directed toward a peer computing system that includes a plurality of peer nodes configured to couple to a network and to implement a peer-to-peer environment, a partitioning mechanism, and one or more relay peer nodes operable to couple to the network outside the mechanism, as described above regarding claim 1. Each of the peer nodes inside the mechanism is operable to publish an advertisement on the one or more relay peer nodes. For example, a peer advertisement may describe the peer's resources and include specific information about the peer, such as its name, peer identifier, registered services and available endpoints, in various embodiments. Each of the peer nodes outside the partitioning mechanism is operable to discover the advertisements for the peer nodes inside the partitioning mechanism published on the one or more relay peer nodes. For example, in one embodiment, peer-to-peer protocols may be embodied as markup language (e.g. XML) messages that may be sent between two peers and these peer-to-peer platform messages may define the protocols used to discover and connect peers and peer groups. *See, e.g.*, page 8, lines 27-30; page 21, lines 8-11; page 52, lines 26-30; page 64, lines 14-15; page 107, lines 9-12; and FIGs. 6-11 and 30.

In various embodiments, the partitioning mechanism may be a firewall or NAT gateway, as described above, and the relay peer nodes may be operable to relay messages between the peer nodes outside the partitioning mechanism and the peer nodes inside the partitioning mechanism. In various embodiments, the relay peer node may be operable to cache route information or to use route information included in a message to route the message to the destination peer node. The route information may include an ordered sequence of peer identifiers configured for use in routing a message to a destination peer. Please refer to the description of claim 1 for a detailed discussion of the partitioning mechanism, the relay peer node, and route information. *See, e.g.*, page 10, line 25 – page 11, line 2; page 97, lines 10-16; page 108, lines 8-9; page 110, lines 9-16 and 21-22; page 111, lines 7-14; and FIGs. 31 and 32.

Independent claim 20 is directed toward a peer node including a network interface for coupling to a network and a memory including program instructions executable within the peer node to receive a message from a source peer node on the network and relay the message to a destination peer node, according to a peer-to-peer platform. The peer nodes are configured to implement a peer-to-peer environment on the network according to the peer-to-peer platform, which includes one or more peer-to-peer platform protocols for enabling the peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. In various embodiments, a peer may be any entity that runs some or all of one or more protocols provided by the peer-to-peer platform core layer, including sensors, servers, PCs, computers up to and including supercomputers, PDAs, manufacturing and medical equipment, phones and cellular phones. In various embodiments, peer nodes may be coupled to any network (wired or wireless), such as IP, Bluetooth, or Havi, among others. *See, e.g.*, FIGs. 1A, 1B and 2; page 4, lines 21-26; page 8, lines 9-12; page 16, lines 3-5; page 17, line 5 – page 18, line 2; and page 64, lines 1-12.

In some embodiments, the peer node may be operable to cache route information or to use route information included in a message to route the message to the destination

peer node, as described above. The route information may include an ordered sequence of peer identifiers configured for use in routing a message to a destination peer. In other embodiments, the peer node may be operable to receive a query requesting route information to a peer node from another peer node, formatted according to an endpoint routing protocol, and to send the requested route information to the requesting peer node. *See, e.g.*, page 10, line 25 – page 11, line 2; page 97, lines 10-16; page 108, lines 8-9; page 110, lines 9-16 and 21-22; page 111, lines 7-14; and FIGs. 31 and 32.

Independent claim 30 is directed toward a peer computing system including a plurality of peer nodes operable to couple to a network and means for the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in a peer-to-peer environment on the network, as described above. In some embodiments, these means may be implemented as an architecture including a collection of peer-to-peer protocols, as described on page 2, lines 15-23 and in FIG. 2 (elements 122, 124 and 126). This architecture may be implemented in hardware and/or software on one of various peer devices 104 (sensors, consumer electronics, Personal Digital Assistants, appliances, network routers, desktop computers, data-center servers, storage systems, etc.), as illustrated in FIGs. 1A and 1B and described on p. 27, line 30 – page 28, line 5. The computing system includes means for partitioning the plurality of peer nodes on the network into a set of one or more peer nodes inside the partition and a set of one or more peer nodes outside the partition, in which peer nodes on opposite sides of the partition cannot communicate directly with each other on the network. For example, the partitioning means may include a firewall or NAT gateway. In various embodiments, such partitioning means (e.g., firewall) may be a set of related hardware and/or software programs, typically implemented on a network gateway server, which protects the resources of a private network from users from other networks (see, e.g., page 7, lines 6-8). For example, FIGs. 20-26 and 29 illustrate a firewall 248, according to various embodiments. As is well known in the art, partitioning means, such as firewalls or NAT gateways, may be implemented in other combinations of hardware and software or in hardware or software alone. The computing system includes means for the peer nodes inside the partition to advertise themselves outside the

partition and means for the peer nodes outside the partitioning mechanism to discover the advertised peer nodes inside the partition. As described on page 111, lines 16-19, these means (for implementing the methods illustrated in FIG. 30) may be implemented as hardware, software, or a combination thereof. For example, these means may include a rendezvous proxy 206, a discovery proxy 207, a relay peer 244, a relay service 440, a proxy 246, or a proxy service 270 (see, e.g., FIGs. 13, 14, 20 and 29.), which in turn may be implemented in hardware and/or software on any of the various types of computing devices described on p. 27, line 30 – page 28, line 5. A peer advertisement may describe the peer's resources and include specific information about the peer, such as its name, peer identifier, registered services and available endpoints, in various embodiments. *See, e.g.*, page 8, lines 27-30; page 52, lines 26-30; page 64, lines 14-15; page 107, lines 9-12; and FIGs. 6-11 and 30.

In some embodiments, the computing system may include means to relay messages between the peer nodes outside the partitioning mechanism and the peer nodes inside the partitioning mechanism, as described above. As described on page 106, line 26 – page 107, line 4, this mechanism may include a router or relay peer 244 (see FIGs. 19 and 29). In various embodiments, the computing system may include means to cache route information or to use route information included in a message to route the message to the destination peer node, as described above. The means for relaying messages between peer nodes across the partitioning mechanism and caching or using route information to route the message (e.g., for implementing the methods illustrated in FIGs. 31 and 32) may include a relay peer node 244 and may be implemented in hardware, software, or a combination thereof. *See, e.g.*, page 8, lines 3-7 and 19-27; page 10, line 25 – page 11, line 2; page 106, lines 10-26; page 108, lines 8-9; page 110, lines 9-16 and 21-22; page 111, lines 7-19; and FIGs. 19, 29, 31 and 32.

Independent claim 37 is directed toward a method, including a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, in which the peer-to-peer platform includes one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate

with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. The method also includes one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, where peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism. The method includes one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node and sending a message to the peer node inside the partitioning mechanism to the relay peer node. The method also includes the relay peer node relaying the message to the peer node inside the partitioning mechanism. Please refer to the description of claims 1 and 11, above, for detailed discussions regarding peer-to-peer environments, platforms, and protocols; partitioning mechanisms; and publishing and discovering advertisements across a partitioning mechanism.

In various embodiments, the method may also include the relay peer node caching or using route information to route messages to destination peer nodes, and receiving and responding to a query requesting route information, as described above in regard to claim 1.

Independent claim 45 is directed toward a method including a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, in which the peer-to-peer platform includes one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. The method includes one or more of the plurality of peer nodes being relay peer nodes and one of the relay peer nodes caching route information including an ordered sequence of peer identifiers configured for use in routing a message to a destination peer. Please refer to the description of claim 1 for a detailed discussion regarding peer-to-peer environments, platforms, and protocols; relay nodes; cached route information.

In some embodiments, the method includes one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, where peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism; one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node; and the peer node outside the partitioning mechanism and the peer node inside the partitioning mechanism exchanging messages through the relay peer node. Please refer to the description of claim 11 for a detailed discussion regarding publishing and discovering advertisements across a partitioning mechanism using a relay peer node.

Independent claim 51 is directed toward an article of manufacture including software instructions executable to implement a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, in which the peer-to-peer platform includes one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. The software instructions are further executable to implement one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, where peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism, and one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node. The software instructions are also executable to implement the peer node outside the partitioning mechanism sending a message to the peer node inside the partitioning mechanism to the relay peer node and the relay peer node relaying the message to the peer node inside the partitioning mechanism. Please refer to the description of claims 1 and 11 for detailed discussions regarding peer-to-peer environments, platforms, and protocols; partitioning mechanisms; relay peer nodes; and publishing and discovering advertisements across a partitioning mechanism.

In various embodiments, the software instructions may be further operable to implement the relay peer node caching or using route information to route messages to destination peer nodes, and receiving and responding to a query requesting route information, as described above in regard to claim 1.

Independent claim 57 is directed toward an article of manufacture including software instructions executable to implement a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, in which the peer-to-peer platform includes one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment, as described above in regard to claim 1. The peer-to-peer platform includes one or more of the plurality of peer nodes implementing a relay service in accordance with the peer-to-peer platform to perform as relay peer nodes. For example, Appellants' FIG. 29 depicts a relay peer 244 coupled to network 406. In this example, relay peer 244 includes relay service 400, which is used to connect peer 200A (on one side of firewall 248) to peer 200A (on the other side of firewall 248). *See, e.g.*, page 104, lines 27-29.

The peer-to-peer platform also includes one of the relay peer nodes caching route information describing one or more routes to other peer nodes on the network. The route information is configured for use in routing messages between peer nodes in the peer-to-peer environment, and includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes. Please refer to the description of claim 1 for a detailed discussion of relay peer nodes caching and using route information.

In various embodiments, the software instructions are further executable to implement receiving and responding to a query requesting route information according to an endpoint protocol. *See, e.g.*, page 97, lines 10-16. In other embodiments, the software instructions are further executable to implement one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, where peer nodes inside the partitioning

mechanism cannot directly communicate with peer nodes outside the partitioning mechanism; one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node; and the peer node outside the partitioning mechanism and the peer node inside the partitioning mechanism exchanging messages through the relay peer node. Please refer to the description of claim 11 for a detailed discussion regarding partitioning mechanisms; relay peer nodes; and publishing and discovering advertisements across a partitioning mechanism.

The summary above describes various examples and embodiments of the claimed subject matter; however, the claims are not necessarily limited to any of these examples and embodiments. The claims should be interpreted based on the wording of the respective claims.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-62 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Kouznetsov et al. (U.S. Patent 6,782,527) (hereinafter "Kouznetsov").

VII. ARGUMENT

Appellants traverse the rejection of claims 1-62 for at least the following reasons. Different groups of claims are addressed under their respective subheadings.

Claims 1 and 3:

Regarding claim 1, contrary to the Examiner's assertion, Kouznetsov fails to disclose a plurality of peer nodes...configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. Instead of a peer-to-peer environment,

Kouznetsov teaches a centralized client/server environment. Kouznetsov teaches a method for distributing at least portions of an application centrally located on an application management server to a plurality of network appliance clients. Nowhere does Kouznetsov teach or suggest that the application management server and/or the network appliance clients are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols that enable the participating peer nodes to participate in the peer-to-peer functionalities as described in Appellants' claim 1. To the contrary, Kouznetsov teaches a centralized distribution model. The centralized server model is clearly indicated in Kouznetsov col. 3, lines 35-40:

> Briefly stated, the present invention involves a method of providing a set of desired application functions to a plurality of network-coupled computing appliances. A set of code resident on a network-connected application management server is identified that when executed in a network appliance provides the desired application functions.

And in col. 4, lines 10-14, Kouznetsov clearly discloses the centralized model of his invention:

> In accordance with the present invention, application code is efficiently distributed amongst and executed by a variety of client machines, but is maintained in a consistent state with a model of the application that is resident on a centralized network-connected server.

Thus, Kouznetsov's description of the invention in col. 3, lines 35-52 and elsewhere does not disclose a method implemented on peer nodes configured to participate in a peer-to-peer environment according to a peer-to-peer platform that allows the participating peer nodes to participate in the peer-to-peer functionalities described in claim 1.

Kouznetsov does disclose, in col. 5, lines 19-21, that "the present invention is readily adapted for both client/server and peer-to-peer type networks as well as hybrid topologies." However, claim 1 recites more than just a "peer-to-peer type network". Furthermore, Kouznetsov provides absolutely no description whatsoever of how his teachings would be adapted a peer-to-peer type network. Nor does Kouznetsov provide

any description whatsoever of what portions of his system would participate as peers in a peer-to-peer type network. Even if Kouznetsov's system was adapted for a peer-to-peer type network, it would not mean that the application management server and/or the network appliances would be peer nodes configured to implement a peer-to-peer environment according to a <u>peer-to-peer platform comprising one or more peer-to-peer platform protocols</u> that enable the participating peer nodes to participate in the <u>specific</u> peer-to-peer functionalities as described in Appellants' claim 1. Instead, Kouznetsov only indicates that the invention may be adapted to a peer-to-peer type network. Kouznetsov does not teach that the network appliances themselves would configured as peer nodes configured to implement a peer-to-peer environment according to a <u>peer-to-peer platform comprising one or more peer-to-peer platform protocols</u> as recited in Appellants' claim 1.

Furthermore, even if Kouznetsov's system was adapted for a peer-to-peer network, it would not <u>require</u> that a plurality of peer nodes are partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, wherein peer nodes on opposite sides of the mechanism cannot communicate directly with each other on the network.

In addition, regarding claim 1, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 or elsewhere <u>a relay peer node</u> operable to couple to the network outside the mechanism, and further operable to: <u>receive a message from a peer node outside the mechanism</u>, wherein the message is for a peer node inside the mechanism; and <u>relay the message to the peer node inside the mechanism</u>. In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u> that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to <u>locate</u> network-coupled resources. Nowhere does Kouznetsov teach that the address translation devices are operable to receive messages from one network-coupled resource (such as a network appliance) "outside" a mechanism (e.g., a firewall or Network Address Translation (NAT) gateway) and relay the message to another network-coupled resource (such as a different network appliance) "inside" the mechanism. Further,

nowhere does Kouznetsov teach that the address translation devices are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols as described in Appellants' claim 1, nor does Kouznetsov teach that the "network-coupled resources" are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols as described in Appellants' claim 1.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 1, independent claim 1 is clearly not anticipated by Kouznetsov.

In the **Response to Arguments** section of the Final Action, the Examiner asserts that Appellants argue "in substance that A) Kouznetsov does not disclose peer to peer network and peer to peer platform protocols. B) Kouznetsov does not disclose wherein the mechanism is a Network Address Translation. C) Kouznetsov does [not] disclose a relay node." As shown in more detail below, the Examiner has ignored specific details of Appellants arguments and claims.

Regarding A, the Examiner asserts that Kouznetsov discloses that the present invention is readily adapted for peer to peer networks as clearly stated in col. 5, lines 19-23, and that using peer to peer platform protocols is inherent in peer to peer networks. However, as Appellants previously noted, simply employing a peer-to-peer network in Kouznetsov's system would not result in Appellants' claimed invention. Implementing Kouznetsov's method for distributing at least portions of an application centrally located on an application management server to a plurality of network appliances in a peer-to-

peer type network does not imply that those clients and servers must necessarily be configured as described in claim 1. A peer-to-peer network may be configured in many different ways, and there would be many different ways to implement Kouznetsov's distribution method on such a network. No description is given for an alternate distribution method, for a peer to peer network, in which network appliances themselves are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment, as recited in Appellants' claim 1. For example, to create a peer-to-peer network, there is no requirement that the peers implement any protocol for discovery or forming groups. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is **necessarily present** in the things described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPA2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added).

The existence of a conventional peer-to-peer network in a computer system does not mean that a plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. For example, in conventional peer-to-peer networks, the peers typically do not implement a protocol platform for discovering other peers and forming peer groups. Therefore, the rejection is clearly improper.

Regarding B, the Examiner asserts that the address translation devices of Kouznetsov (col. 6, lines 24-37) provide dynamic mapping and allow a network to present itself to the internet with fewer IP addresses than there are nodes on its internal

network, which is implemented in a router, firewall or pc. The Examiner further asserts that there are 2 types of NAT (static and dynamic) and that Kouznetsov discloses the dynamic type of NAT. **However, as further discussed below regarding claim 4, this conflicts with the Examiner's earlier remarks regarding claim 1, in which he equates the address translation devices of Kouznetsov with the relay peer node of the present invention (an assertion that Appellants have traversed above regarding claim 1), not with the mechanism for partitioning the plurality of peer nodes into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, where the mechanism is a Network Address Translation (NAT) gateway.**

Kouznetsov does not teach a plurality of peer nodes that are partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, wherein peer nodes on opposite sides of the mechanism cannot communicate directly with each other on the network. Even if Kouznetsov's system was adapted for a peer-to-peer network, it would not <u>necessarily</u> result in a plurality of peer nodes that are partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, wherein peer nodes on opposite sides of the mechanism cannot communicate directly with each other on the network.

Regarding C, the Examiner broadly interprets the connect server item number 105 in Kouznetsov FIG. 1 as the relay node which couples the appliance to the network. However, there is nothing in Kouznetsov that teaches or discloses that connect server 105 is <u>a peer node</u>... operable to receive a message from a peer node outside the mechanism; wherein the message is for a peer node inside the mechanism; and <u>relay</u> the message to the peer node inside the mechanism, nor does the Examiner give any specific evidence to support this interpretation. Instead, connect server 105 is described as being implemented by <u>connection sharing software</u> to <u>couple</u> local networks 103 and 104 to network 101, not to <u>relay messages</u> across a <u>partitioning mechanism</u>. Furthermore, as discussed above regarding A), adapting Kouznetsov's application code distribution

method for a peer-to-peer network would not **necessarily require** a relay peer node, configured as recited in claim 1. **Finally, this interpretation conflicts with the Examiner's own remarks in the rejection of claim 1, in which he describes address translation devices 111, not connect server 105, as implementing the message-relaying functions of a relay peer node.** Nowhere does Kouznetsov teach or suggest that connect server 105 or address translation device 111 are configured as a relay peer node to relay messages from one peer node to another peer node across a mechanism that partitions the peers. Nor would adapting Kouznetsov for a peer-to-peer type network require these specific limitations.

Thus, for at least the reasons presented above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested.

Claim 2:

Regarding claim 2, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49 or elsewhere that the relay peer node is configured to receive a message from the peer node *inside* the mechanism, wherein the message is for the peer node outside the mechanism; and relay the message to the peer node *outside* the mechanism. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly is not referring to a "relay peer node" that relays messages between the agent/appliance and the application management server across a partitioning mechanism. Kouznetsov's statement that the agent has "establishe[d] a frequent connection" with the application management server clearly indicates that a *connection* is established between the network appliance and the application management server, and thus that no "relay peer node" is used to relay messages between the network appliance and the application management server.

Thus, for at least the reasons presented above, the rejection of claim 2 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 4:

Regarding claim 4, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 that "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u> that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the <u>relay peer node</u> of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node <u>and</u> the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 4 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 5:

Regarding claim 5, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, a <u>relay peer node</u> operable to <u>cache route information describing one or more routes to peer nodes on a network</u>. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a <u>relay peer node</u> (see Appellants' responses to the Examiner's rejection for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of <u>route information</u> describing one or more <u>routes to peer nodes</u> on a network. Thus, Kouznetsov does not teach or suggest a relay peer node operable to cache route

information describing one or more routes to peer nodes on a network. The Examiner failed to rebut this argument in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 5 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 6:

Regarding claim 6, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest wherein to relay the message to the peer node inside the mechanism, the relay peer is operable to use the cached route information to route the received message to the peer node. The Examiner cites col. 5, lines 24-40 in asserting that Kouznetsov discloses that local networks are coupled through firewalls which may be implemented by routers. However, this teaching is not the same as a relay peer node using cached route information to route a received message to a peer node. In fact, as discussed above regarding claim 5, Kouznetsov does not disclose a relay peer node, or caching route information. Therefore, Kouznetsov cannot teach or suggest such a relay peer node using such cached route information to route messages between peer nodes.

Thus, for at least the reasons presented above, the rejection of claim 6 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 7:

Regarding claim 7, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 5), further operable to receive a query requesting route information to one of the plurality of peer nodes from another one of the plurality of peer nodes, wherein the query is formatted according to an endpoint routing protocol; and to send the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the

limitations of claim 7. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are formatted according to an endpoint routing protocol, as recited in Appellants' claim 7. No such routing protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 7 is unsupported by the prior art, and removal thereof is respectfully requested.

Claim 8:

Regarding claim 8, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node. First, as discussed above regarding claim 5, Kouznetsov does not disclose caching route information at all, much less any specific components of such information. Furthermore, the Examiner cites col. 6, lines 38-49 as disclosing the downloading of updates when appropriate. This passage again describes the downloading of updated application code to an appliance, and has nothing to do with the makeup of routing information for a message between peer nodes. There is nothing in this passage or elsewhere in Kouznetsov that teaches or suggests the use of routing information, much less routing information specifically including an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node, as recited in Appellants' claim 8.

For at least the reasons above, the rejection of claim 8 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 9:

Regarding claim 9, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, that a <u>message includes route information</u>, and wherein, to relay the message to the peer node inside the mechanism, the relay peer is operable to <u>use the route information included in the message to route the received message to the peer node outside the mechanism</u>. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message. The Examiner failed to rebut this argument in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 9 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 10:

Regarding claim 10, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the system of claim 9, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node. First, as discussed above regarding claim 9, Kouznetsov does not teach or suggest a message including routing information. Furthermore, the Examiner has cited col. 8, line 64 – col. 9, line 5, as disclosing that an agent is acting as a relay server. While this passage does describe what the Examiner says, this has nothing to do with the limitations of claim 10. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests Kouznetsov's "relay server" using route information contained in a message, nor that this route information includes <u>an ordered sequence of peer identifiers</u> configured for use in routing a message to a destination peer node.

Therefore, for at least the reasons above, the rejection of claim 10 is not supported by the prior art and the removal thereof is respectfully requested.

Claims 11 and 12:

Regarding claim 11, contrary to the Examiner's assertion, for similar reasons as discussed above in regard to claim 1, Kouznetsov fails to disclose a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. Further, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 or elsewhere relay peer nodes operable to couple to the network outside a mechanism, for reasons similar to those discussed above in regard to claim 1.

In addition, regarding claim 11, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 or elsewhere, that each of the peer nodes inside the mechanism are operable to publish an advertisement on the one or more relay peer nodes. In col. 6, lines 24-37, Kouznetsov describes address translation devices that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. Kouznetsov does not teach in col. 6, lines 24-37 or elsewhere that any other devices are operable to publish advertisements on the address translation devices or anywhere else on the network. Kouznetsov nowhere mentions advertisements at all, and certainly never mentions publishing advertisements.

In further regard to claim 11, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 9, lines 31-39 or elsewhere that each of the peer nodes outside the mechanism are operable to discover the advertisements for the peer nodes inside the mechanism published on the one or more relay peer nodes. First, as noted above, Kouznetsov does not teach the publishing of advertisements. Second, in col. 9, lines 31-

39, Kouznetsov describes, as the Examiner correctly points out, the downloading of application code from a secondary resource (e.g., another appliance). Appellant notes that there is a clear distinction between the process of "discovering" (e.g., an advertisement) and the process of "downloading" (e.g., application code). There is also a clear distinction between a published "advertisement" and "application code." Thus, Appellants respectfully fail to see what the cited paragraph from Kouznetsov, which describes the downloading of application code from a secondary resource, has to do with the discovering of advertisements published on a relay peer node.

Appellants remind the Examiner that anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 11, independent claim 11 is clearly not anticipated by Kouznetsov.

The Examiner failed to rebut any of the arguments regarding claim 11 in the Final Action or in the Advisory Action. For at least the reasons presented above, the rejection of claim 11 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 13:

Regarding claim 13, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37, that, "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes address translation devices that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the

address translation devices described in Kouznetsov with the relay peer node of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node and the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 13 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 14:

Regarding claim 14, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the one or more relay peer nodes are further operable to relay messages between the peer nodes outside the mechanism and the peer nodes inside the mechanism. The Examiner cites col. 5, lines 24-40, in which Kouznetsov discloses that local networks are coupled through firewalls, which may be implemented by routers. Therefore, rather than disclosing that a router may act as a relay peer node, this passage describes that a partitioning mechanism (firewall) may be implemented in a router. It also does not teach or suggest that messages are relayed across such a mechanism by a relay peer node. As previously discussed, Kouznetsov does not teach or suggest the relay peer nodes of the present invention.

Therefore, for at least the reasons above, Kouznetsov cannot be said to anticipate claim 14 and removal of the rejection thereof is respectfully requested.

Claim 15:

Regarding claim 15, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, the relay peer node operable to cache route information describing one or more routes to peer nodes on the network. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a relay peer node (see Appellants' responses to the Examiner's objections for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of route information describing one or more routes to peer nodes on a network. Thus, Kouznetsov does not teach or suggest the relay peer node operable to cache route information describing one or more routes to peer nodes on the network. The Examiner failed to rebut this argument (as applied to claim 5) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 15 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 16:

Regarding claim 16, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest wherein to relay the messages between nodes, the relay peer is operable to use the cached route information to route the received message to the peer node. The Examiner cites col. 5, lines 24-40 in asserting that Kouznetsov discloses that local networks are coupled through firewalls which may be implemented by routers. While this passage does describe what the Examiner says, it does not disclose a relay peer node using cached route information to route a received message to a peer node. In fact, as discussed above regarding claim 15, Kouznetsov does not disclose a relay peer node, or caching route information. Therefore, Kouznetsov cannot teach or suggest such a relay peer node using such cached route information to route messages between peer nodes.

Thus, for at least the reasons presented above, the rejection of claim 16 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 17:

Regarding claim 17, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node. First, as discussed above regarding claim 15, Kouznetsov does not disclose caching route information at all, much less any specific components of such information. Furthermore, the Examiner cites col. 6, lines 38-49 as disclosing the downloading of updates when appropriate. This passage describes the downloading of updated application code to an appliance, and has nothing to do with the makeup of routing information for a message between peer nodes. There is nothing in this passage or elsewhere in Kouznetsov that teaches or suggests the use of routing information, much less routing information specifically including <u>an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node,</u> as recited in Appellants' claim 17.

For at least the reasons above, the rejection of claim 17 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 18:

Regarding claim 18, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, the <u>message includes route information</u>, and wherein, to relay the messages between the peer nodes, the relay peer is operable to <u>use the route information included in the message to route the received message to the peer node outside the mechanism</u>. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message. The Examiner failed to rebut this argument (as applied to claim 9) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 18 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 19:

Regarding claim 19, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the system of claim 18, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node. First, as discussed above regarding claim 18, Kouznetsov does not teach or suggest a message including routing information. Furthermore, the Examiner has cited col. 8, line 64 – col. 9, line 5, as disclosing that an agent is acting as a relay server. While this passage does describe what the Examiner says, this has nothing to do with the limitations of claim 19. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests Kouznetsov's "relay server" using route information contained in a message, nor that this route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node.

Therefore, for at least the reasons above, the rejection of claim 19 is not supported by the prior art and the removal thereof is respectfully requested.

Claims 20 and 28:

Regarding claim 20, contrary to the Examiner's assertion, Kouznetsov fails to disclose a peer node with a memory comprising program instructions executable within the peer node to perform the elements of claim 20 according to a peer-to-peer platform for reasons similar to those cited in regard to claim 1. Further, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37, or elsewhere that the program instructions executable within the peer node are executable to receive a message from a source peer node on the network and relay the message to a destination peer node on the network, for reasons similar to those cited in regard to claim 1. In addition, as discussed above, Kouznetsov fails to disclose that the peer nodes are configured to

implement a peer-to-peer environment on the network according to the peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment.

Anticipation requires the presence in a single prior art reference disclosure of <u>each and every element</u> of the claimed invention, <u>arranged as in the claim</u>. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The <u>identical</u> invention must be shown <u>in as complete detail</u> as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 20, independent claim 20 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 20 is not supported by the cited prior art and removal thereof is respectfully requested.

<u>Claim 21:</u>

Regarding claim 21, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, program instructions executable to <u>cache route information describing one or more routes to other peer nodes on a network</u>. Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of <u>route information</u> describing one or more <u>routes to other peer nodes</u> on a network. Thus, Kouznetsov does not teach or suggest a relay peer node operable to cache route information describing one or more routes to peer nodes on a network. The Examiner failed to rebut this argument (as applied to claim 5) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 21 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 22:

Regarding claim 22, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the program instructions are further executable to locate route information to the destination peer node in the cached route information and route the message to the destination peer node using the located route information. The Examiner cites col. 7, lines 42-49, and states that this passage "discloses receiving a request from an appliance and then the compiled script is forwarded to appliance." This passage, however, has nothing to do with the limitations of claim 22. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. As discussed above regarding claim 21, Kouznetsov does not teach or suggest caching route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests locating route information to a destination peer within such cached route information and using it to route a message, as recited in Appellants' claim 22.

Therefore, the rejection of claim 22 is not supported by the prior art and removal of the rejection thereof is respectfully requested.

Claim 23:

Regarding claim 23, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes. First, as discussed above regarding claim 21, Kouznetsov does not disclose caching route information at all, much less any specific components of such information. Furthermore, the Examiner cites col. 6, lines 38-49 as disclosing the downloading of updates when appropriate. This passage again describes the downloading of updated application code to an appliance, and has nothing to do with the makeup of routing information for a

message between peer nodes. There is nothing in this passage or elsewhere in Kouznetsov that teaches or suggests the use of routing information, much less routing information specifically including ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes, as recited in Appellants' claim 23.

For at least the reasons above, the rejection of claim 23 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 24:

Regarding claim 24, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 21), further operable to receive a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and send the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 24. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are formatted according to an endpoint routing protocol, as recited in Appellants' claim 24. No such routing protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 24 is unsupported by the prior art, and removal thereof is respectfully requested.

Claim 25:

Regarding claim 25, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, that the message includes route information,

and wherein, to relay the message to the destination peer node, the program instructions are further executable to route the received message to the destination peer node using the route information included in the message. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message. The Examiner failed to rebut this argument (as applied to claim 9) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 25 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 26:

Regarding claim 26, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the system of claim 25, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing messages to the destination peer node. First, as discussed above regarding claim 25, Kouznetsov does not teach or suggest a message including routing information. Furthermore, the Examiner has cited col. 8, line 64 – col. 9, line 5, as disclosing that an agent is acting as a relay server. While this passage does describe what the Examiner says, this has nothing to do with the limitations of claim 26. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests Kouznetsov's "relay server" using route information contained in a message, nor that this route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer.

Therefore, for at least the reasons above, the rejection of claim 26 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 27:

Regarding claim 27, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest wherein the source peer node is on the outside of a partitioning mechanism on the network, and wherein the destination peer node is on the inside of the partitioning mechanism, wherein the source peer node and the destination peer node cannot communicate directly with each other on the network across the partitioning mechanism. The Examiner cites col. 5, lines 24-40, in which Kouznetsov "discloses a firewall separating appliances." However, this citation does not teach or suggest that these appliances are source and destination **peer nodes**, as recited in Appellants' claim 27 and configured according to the peer-to-peer platform recited in Appellants' claim 20.

Therefore, for at least the reasons above, the rejection of claim 27 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 29:

Regarding claim 29, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 that "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes address translation devices that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the relay peer node of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node and the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 29 is not supported by the cited prior art and removal thereof is respectfully requested.

<u>Claims 30 and 31:</u>

Regarding claim 30, contrary to the Examiner's assertion, Kouznetsov fails to disclose means for the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in a peer-to-peer environment on the network for reasons similar to those cited in regard to claim 1. Further, contrary to the Examiner's assertion, Kouznetsov fails to disclose means for the peer nodes inside the partition to advertise themselves outside the partition and means for the peer nodes outside the mechanism to discover the advertised peer nodes inside the partition, for reasons similar to those cited in regard to claim 11.

Anticipation requires the presence in a single prior art reference disclosure of <u>each and every element</u> of the claimed invention, <u>arranged as in the claim</u>. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The <u>identical</u> invention must be shown <u>in as complete detail</u> as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 30, independent claim 30 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 30 is not supported by the cited prior art and removal thereof is respectfully requested.

<u>Claim 32:</u>

Regarding claim 32, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 that "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u>

that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the relay peer node of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node and the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 32 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 33:

Regarding claim 33, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the peer computing system of claim 30, further comprising means for relaying messages between the peer nodes outside the mechanism and the peer nodes inside the mechanism. The Examiner cites col. 5, lines 24-40, in which Kouznetsov discloses that local networks are coupled through firewalls, which may be implemented by routers. However, this does not teach or suggest that messages are relayed across such a mechanism between peer nodes, as recited in Appellants' claim 33.

Therefore, for at least the reasons above, the rejection of claim 33 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 34:

Regarding claim 34, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, the relay peer node comprises means for caching route information describing one or more routes to peer nodes on the network. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a relay peer node (see Appellants' responses to the Examiner's objections for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of route information describing one or more routes to peer nodes on a network. Thus, Kouznetsov does not teach or suggest a relay peer node comprising means for caching route information describing one or more routes to peer nodes on the network. The Examiner failed to rebut this argument (as applied to claim 5) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 34 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 35:

Regarding claim 35, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest wherein to relay the messages between the peer nodes, the relay peer further comprises means for using the cached route information to route the received message to the peer node. The Examiner cites col. 5, lines 24-40 in asserting that Kouznetsov discloses that local networks are coupled through firewalls which may be implemented by routers. While this passage does describe what the Examiner says, it does not disclose a relay peer node using cached route information to route a received message to a peer node inside a partitioning message. In fact, as discussed above regarding claim 34, Kouznetsov does not disclose a relay peer node, or caching route information. Therefore, Kouznetsov cannot teach or suggest such a relay peer node using such cached route information to route messages between peer nodes.

Thus, for at least the reasons presented above, the rejection of claim 35 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 36:

Regarding claim 36, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, that the message includes route information, and wherein, to relay the messages between the peer nodes, the relay peer further comprises means for using the route information included in the message to route the received message to the peer node outside the mechanism. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message. The Examiner failed to rebut this argument (as applied to claim 9) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 36 is not supported by the cited prior art and removal thereof is respectfully requested.

Claims 37 and 43:

Regarding claim 37, Kouznetsov fails to disclose a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment, for reasons similar to those cited in regard to claim 1. Further, Kouznetsov fails to disclose one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism for reasons similar to those cited in regard to claim

11. In addition, Kouznetsov fails to disclose one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node, for reasons similar to those cited in regard to claim 11. Further, Kouznetsov fails to disclose in col. 6, lines 24-37, or elsewhere a peer node outside the partitioning mechanism sending a message to the peer node inside the partitioning mechanism to the relay peer node; and the relay peer node relaying the message to the peer node inside the partitioning mechanism, for reasons similar to those cited in regard to claim 1. Also note that Appellants assert that Kouznetsov does not disclose a relay peer node at all for reasons similar to those cited in regard to claim 1.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 37, independent claim 37 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 37 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 38:

Regarding claim 38, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, the relay peer node caching route information describing one or more routes to other peer nodes on the network. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a relay peer node (see Appellants' responses to the Examiner's objections for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of route information describing one or more routes to peer nodes on a network.

Thus, Kouznetsov does not teach or suggest a relay peer node caching route information describing one or more routes to other peer nodes on a network. The Examiner failed to rebut this argument (as applied to claim 5) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 38 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 39:

Regarding claim 39, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes. First, as discussed above regarding claim 38, Kouznetsov does not disclose caching route information at all, much less any specific components of such information. Furthermore, the Examiner cites col. 6, lines 38-49 as disclosing the downloading of updates when appropriate. This passage again describes the downloading of updated application code to an appliance, and has nothing to do with the makeup of routing information for a message between peer nodes. There is nothing in this passage or elsewhere in Kouznetsov that teaches or suggests the use of routing information, much less routing information specifically including <u>ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes,</u> as recited in Appellants' claim 39.

For at least the reasons above, the rejection of claim 39 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 40:

Regarding claim 40, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 38), receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol and... sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The

Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 40. Instead, it describes an appliance requesting <u>updated application code</u>, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for <u>route information</u>. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are <u>formatted according to an endpoint routing protocol</u>, as recited in Appellants' claim 40. No such <u>routing</u> protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 40 is unsupported by the prior art, and removal thereof is respectfully requested.

<u>Claim 41:</u>

Regarding claim 41, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, that the <u>message includes route information</u>, and wherein, in said relaying the message, the method further comprises routing the message to the peer node inside the partitioning mechanism <u>using the route information included in the message.</u> Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, ...downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message. The Examiner failed to rebut this argument (as applied to claim 9) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 41 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 42:

Regarding claim 42, contrary to the Examiner's assertion, Kouznetsov does not teach or suggest the route information includes an ordered sequence of peer identifiers. First, as discussed above regarding claim 41, Kouznetsov does not disclose route information included in a message at all, much less any specific components of such information. Furthermore, the Examiner cites col. 6, lines 38-49 as disclosing the downloading of updates when appropriate. This passage again describes the downloading of updated application code to an appliance, and has nothing to do with the makeup of routing information for a message between peer nodes. There is nothing in this passage or elsewhere in Kouznetsov that teaches or suggests the use of routing information, much less routing information specifically including <u>an ordered sequence of peer identifiers,</u> as recited in Appellants' claim 42.

For at least the reasons above, the rejection of claim 42 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 44:

Regarding claim 44, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37, that, "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u> that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the <u>relay peer node</u> of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node <u>and</u> the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation

device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 44 is not supported by the cited prior art and removal thereof is respectfully requested.

Claims 45 and 49:

Regarding claim 45, contrary to the Examiner's assertion, Kouznetsov fails to disclose a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment, for reasons similar to those cited in regard to claim 1. Further, contrary to the Examiner's assertion, Kouznetsov fails to disclose one or more of a plurality of peer nodes as relay peer nodes, for reasons similar to those cited in regard to claim 1. In addition, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40 and figure 1, or elsewhere, a relay peer node caching route information describing one or more routes to other peer nodes on the network, for reasons similar to those cited in regard to claim 5.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 45, independent claim 45 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 45 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 46:

Regarding claim 46, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 45), receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and… sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The Examiner cites col. 6, lines 38-49, in which Kouznetsov "discloses the downloading of the updates when appropriate." This passage, however, has nothing to do with the limitations of claim 46. Instead, it describes downloading updated application code to an appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are formatted according to an endpoint routing protocol, as recited in Appellants' claim 46. No such routing protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 46 is unsupported by the prior art, and removal thereof is respectfully requested.

Claim 47:

Regarding claim 47, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on the relay peer node, wherein the relay peer node is outside the partitioning mechanism, and wherein peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism; one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes

receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 47. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a peer node inside a partitioning mechanism on the network publishing an advertisement on the relay peer node... and one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node, as recited in Appellants' claim 47.

Therefore, the rejection of claim 47 is not supported by the prior art and the removal thereof is respectfully requested.

Claim 48:

Regarding claim 48, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the method further comprising the relay peer using the cached route information to route the messages to the destination peer node. The Examiner cites col. 5, lines 24-40 in asserting that Kouznetsov discloses physical and logical communication links between network appliances. While this passage does describe what the Examiner says, it does not disclose a relay peer node using cached route information to route a received message to a destination peer node. In fact, as discussed above regarding claim 45, Kouznetsov does not disclose a relay peer node, or caching route information. Therefore, Kouznetsov cannot teach or suggest such a relay peer node using such cached route information to route messages between peer nodes.

Thus, for at least the reasons presented above, the rejection of claim 48 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 50:

Regarding claim 50, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37, that, "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u> that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the <u>relay peer node</u> of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node <u>and</u> the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 50 is not supported by the cited prior art and removal thereof is respectfully requested.

Claims 51 and 55:

Regarding claim 51, contrary to the Examiner's assertion, for reasons similar as discussed above in regard to claim 1, Kouznetsov fails to disclose a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment.

In addition, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, figure 1, or elsewhere, that one of the plurality of peer nodes inside a partitioning on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, wherein peer node inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism. While Kouznetsov describes local networks 103 and 104 that may be coupled to network 101 though a firewall 106, there is nothing in this passage or elsewhere that describes publishing an advertisement on a relay peer node, nor that describes a relay peer node at all. In fact, Kouznetsov nowhere mentions advertisements at all, and certainly never mentions publishing advertisements. This passage also does not teach or suggest one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node, as the Examiner asserts.

Finally, Kouznetsov fails to teach or suggest in col. 6, lines 24-37, or elsewhere, the relay peer node relaying the message to the peer node inside the partitioning mechanism, as the Examiner asserts. In col. 6, lines 24-37, Kouznetsov describes address translation devices that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. Nowhere does Kouznetsov teach that the address translation devices are operable to receive messages from one network-coupled resource (such as a network appliance) "outside" a mechanism (e.g., a firewall or Network Address Translation (NAT) gateway) and relay the message to another network-coupled resource (such as a different network appliance) "inside" the mechanism. Further, nowhere does Kouznetsov teach that the address translation devices are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols as described in Appellants' claim 51, nor does Kouznetsov teach that the "network-coupled resources" are peer nodes configured to implement a peer-to-peer environment according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols as described in Appellants' claim 51.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the limitations of independent claim 51, independent claim 51 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 51 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 52:

Regarding claim 52, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, that the software instructions are further executable to implement the relay peer node caching route information describing one or more routes to other peer nodes on the network. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a relay peer node (see Appellants' responses to the Examiner's objections for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of route information describing one or more routes to peer nodes on a network. Thus, Kouznetsov does not teach or suggest program instructions executable to implement the relay peer node caching route information describing one or more routes to other peer nodes on the network. The Examiner failed to rebut this argument (as applied to claim 5) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 52 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 53:

Regarding claim 53, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 52), receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and… sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 53. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are formatted according to an endpoint routing protocol, as recited in Appellants' claim 53. No such routing protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 53 is unsupported by the prior art, and removal thereof is respectfully requested.

Claim 54:

Regarding claim 54, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 38-49, or elsewhere, that the message includes route information, and wherein, in said relaying the message, the software instructions are further executable to implement routing the message to the peer node inside the partitioning mechanism using the route information included in the message. Instead, in col. 6, lines 38-49, Kouznetsov describes an agent within a network appliance that "[w]hen appropriate, …downloads updated code" from an application management server with which the agent has "establishe[d] a frequent connection." The paragraph in Kouznetsov cited by the Examiner clearly does not describe anything similar to including route information in messages, or to using the route information included in a message to route the message.

The Examiner failed to rebut this argument (as applied to claim 9) in the Final Action or in the Advisory Action.

Thus, for at least the reasons presented above, the rejection of claim 54 is not supported by the cited prior art and removal thereof is respectfully requested.

<u>Claim 56:</u>

Regarding claim 56, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37 that "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes <u>address translation devices</u> that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the <u>relay peer node</u> of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node <u>and</u> the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 56 is not supported by the cited prior art and removal thereof is respectfully requested.

<u>Claims 57 and 61:</u>

Regarding claim 57, contrary to the Examiner's assertion, for reasons similar as discussed above in regard to claim 1, Kouznetsov fails to disclose a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured

to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment. Further, the Examiner's citations (col. 3, lines 35-52, and figure 1) fail to teach one or more of the plurality of peer nodes implementing a relay service in accordance with the peer-to-peer platform to perform as relay peer nodes. As discussed above regarding claim 1, there is no such mention of relay peer nodes anywhere in Kouznetsov.

Further regarding claim 57, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 5, lines 24-40, and figure 1, one of the relay peer nodes caching route information describing one or more routes to other peer nodes on the network, wherein the route information is configured for use in routing messages between peer nodes in the peer-to-peer environment, and wherein the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes. First, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov teach a relay peer node (see Appellants' responses to the Examiner's objections for claim 1). Second, Appellants note that nowhere in the cited paragraph, or elsewhere, does Kouznetsov disclose the caching of route information describing one or more routes to other peer nodes on the network. Finally, there is nothing in this citation or elsewhere that describes route information or that it includes ordered sequences of peer identifiers configured for use in routing message to destination peer nodes. Thus, Kouznetsov does not teach or suggest all the limitations of claim 57.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As Appellants have shown that Kouznetsov fails to teach many of the

limitations of independent claim 57, independent claim 57 is clearly not anticipated by Kouznetsov.

Thus, for at least the reasons presented above, the rejection of claim 57 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 58:

Regarding claim 58, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the relay peer node (of claim 57), receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and… sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 58. Instead, it describes an appliance requesting updated application code, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a request for route information. Furthermore, there is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a query, and a response to the query, that are formatted according to an endpoint routing protocol, as recited in Appellants' claim 58. No such routing protocol is described or suggested by Kouznetsov.

Thus, for at least the reasons above, the rejection of claim 58 is unsupported by the prior art, and removal thereof is respectfully requested.

Claim 59:

Regarding claim 59, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on the relay peer node, wherein the relay peer node is outside the partitioning mechanism, and wherein peer nodes inside the partitioning

mechanism cannot directly communicate with peer nodes outside the partitioning mechanism; one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node. The Examiner cites col. 7, lines 42-49, in which Kouznetsov describes receiving a request from an application and then forwarding the compiled script to the appliance. This passage, however, has nothing to do with the limitations of claim 59. Instead, it describes an appliance requesting <u>updated application code</u>, which may be compiled before being forwarded to the appliance. There is nothing in this passage, or elsewhere in Kouznetsov, that teaches or suggests a peer node inside a partitioning mechanism on the network <u>publishing an advertisement</u> on the relay peer node... and one of the plurality of peer nodes outside the partitioning mechanism <u>discovering the advertisement</u> to the peer node inside the partitioning mechanism on the relay peer node, as recited in Appellants' claim 59.

Therefore, the rejection of claim 59 is not supported by the prior art and the removal thereof is respectfully requested.

<u>Claim 60:</u>

Regarding claim 60, contrary to the Examiner's assertion, Kouznetsov fails to teach or suggest the software instructions are further executable to implement the relay peer using the cached route information to route the messages to the destination peer node. The Examiner cites col. 5, lines 24-40 in asserting that Kouznetsov discloses physical and logical communication links between network appliances. While this passage does describe what the Examiner says, it does not disclose a <u>relay peer node using cached route information</u> to route a received message to a destination peer node. In fact, as discussed above regarding claim 57, Kouznetsov does not disclose a <u>relay peer node</u>, or <u>caching route information</u>. Therefore, Kouznetsov cannot teach or suggest such a relay peer node using such cached route information to route messages between peer nodes.

Thus, for at least the reasons presented above, the rejection of claim 60 is not supported by the cited prior art and removal thereof is respectfully requested.

Claim 62:

Regarding claim 62, contrary to the Examiner's assertion, Kouznetsov fails to disclose in col. 6, lines 24-37, that, "the mechanism is a Network Address Translation (NAT) gateway." In col. 6, lines 24-37, Kouznetsov describes address translation devices that provide a dynamic mapping between network invalid addresses and network valid addresses and that may be used to locate network-coupled resources. However, Appellants note that, in the rejection of claim 1, the Examiner attempts to equate the address translation devices described in Kouznetsov with the relay peer node of claim 1, not the mechanism that partitions the plurality of peer nodes. Therefore, it appears that the Examiner is asserting that both the relay peer node and the mechanism that partitions the plurality of peer nodes, as described in claim 1, are "address translation devices." The Examiner has stated that Kouznetsov's "address translation device" is both configured to relay messages from one network appliance or other network resource to another network appliance or other network resource across another "address translation device" that partitions the network resources. Such an interpretation of Kouznetsov is clearly incorrect.

Thus, for at least the reasons presented above, the rejection of claim 62 is not supported by the cited prior art and removal thereof is respectfully requested.

VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-62 was erroneous, and reversal of his decision is respectfully requested.

The Commissioner is authorized to charge the appeal brief fee of $500.00 and any other fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit

Account No. 501505/5681-14700/RCK. This Appeal Brief is submitted with a return receipt postcard.

Respectfully submitted,

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IX. CLAIMS APPENDIX

The claims on appeal are as follows.

1. A peer computing system comprising:

a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

wherein the plurality of peer nodes are partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, wherein peer nodes on opposite sides of the mechanism cannot communicate directly with each other on the network;

a relay peer node operable to couple to the network outside the mechanism, and further operable to:

receive a message from a peer node outside the mechanism, wherein the message is for a peer node inside the mechanism; and

relay the message to the peer node inside the mechanism.

2. The peer computing system as recited in claim 1, wherein the relay peer node is further operable to:

receive a message from the peer node inside the mechanism, wherein the message is for the peer node outside the mechanism; and

relay the message to the peer node outside the mechanism.

3. The peer computing system as recited in claim 1, wherein the mechanism is a firewall.

4. The peer computing system as recited in claim 1, wherein the mechanism is a Network Address Translation (NAT) gateway.

5. The peer computing system as recited in claim 1, wherein the relay peer node is further operable to cache route information describing one or more routes to peer nodes on the network.

6. The peer computing system as recited in claim 5, wherein, to relay the message to the peer node inside the mechanism, the relay peer is operable to use the cached route information to route the received message to the peer node outside the mechanism.

7. The peer computing system as recited in claim 5, wherein the relay peer node is further operable to:

receive a query requesting route information to one of the plurality of peer nodes from another one of the plurality of peer nodes, wherein the query is formatted according to an endpoint routing protocol; and

send the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

8. The peer computing system as recited in claim 5, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node.

9. The peer computing system as recited in claim 1, wherein the message includes route information, and wherein, to relay the message to the peer node inside the mechanism, the relay peer is operable to use the route information included in the message to route the received message to the peer node outside the mechanism.

10. The peer computing system as recited in claim 9, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node.

11. A peer computing system comprising:

a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

wherein the plurality of peer nodes are partitioned by a mechanism on the network into a set of one or more peer nodes inside the mechanism and a set of one or more peer nodes outside the mechanism, wherein peer nodes on opposite sides of the mechanism cannot communicate directly with each other on the network;

one or more relay peer nodes operable to couple to the network outside the mechanism;

wherein each of the peer nodes inside the mechanism are operable to publish an advertisement on the one or more relay peer nodes; and

wherein each of the peer nodes outside the mechanism are operable to discover the advertisements for the peer nodes inside the mechanism published on the one or more relay peer nodes.

12. The peer computing system as recited in claim 11, wherein the mechanism is a firewall.

13. The peer computing system as recited in claim 11, wherein the mechanism is a Network Address Translation (NAT) gateway.

14. The peer computing system as recited in claim 11, wherein the one or more relay peer nodes are further operable to relay messages between the peer nodes outside the mechanism and the peer nodes inside the mechanism.

15. The peer computing system as recited in claim 14, wherein the relay peer node is further operable to cache route information describing one or more routes to peer nodes on the network.

16. The peer computing system as recited in claim 15, wherein, to relay the messages between the peer nodes, the relay peer is operable to use the cached route information to route the received message to the peer node outside the mechanism.

17. The peer computing system as recited in claim 15, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node.

18. The peer computing system as recited in claim 14, wherein the message includes route information, and wherein, to relay the messages between the peer nodes, the relay peer is operable to use the route information included in the message to route the received message to the peer node outside the mechanism.

19. The peer computing system as recited in claim 18, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing a message to a destination peer node.

20. A peer node comprising:

a network interface for coupling to a network;

a memory comprising program instructions, wherein the program instructions are executable within the peer node to, according to a peer-to-peer platform:

receive a message from a source peer node on the network; and

relay the message to a destination peer node; and

wherein the peer nodes are configured to implement a peer-to-peer environment on the network according to the peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment.

21. The peer node as recited in claim 20, wherein the program instructions are further executable to cache route information describing one or more routes to other peer nodes on the network.

22. The peer node as recited in claim 21, wherein, to relay the message to the destination peer node, the program instructions are further executable to:

locate route information to the destination peer node in the cached route information; and

route the message to the destination peer node using the located route information.

23. The peer node as recited in claim 21, wherein the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes.

24. The peer computing system as recited in claim 21, wherein the relay peer node is further operable to:

receive a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and

send the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

25. The peer node as recited in claim 20, wherein the message includes route information, and wherein, to relay the message to the destination peer node, the program instructions are further executable to route the received message to the destination peer node using the route information included in the message.

26. The peer node as recited in claim 25, wherein the route information includes an ordered sequence of peer identifiers configured for use in routing messages to the destination peer node.

27. The peer node as recited in claim 20, wherein the source peer node is on the outside of a partitioning mechanism on the network, and wherein the destination peer node is on the inside of the partitioning mechanism, wherein the source peer node and the destination peer node cannot communicate directly with each other on the network across the partitioning mechanism.

28. The peer node as recited in claim 27, wherein the partitioning mechanism is a firewall.

29. The peer node as recited in claim 27, wherein the partitioning mechanism is a Network Address Translation (NAT) gateway.

30. A peer computing system comprising:

a plurality of peer nodes operable to couple to a network;

means for the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in a peer-to-peer environment on the network;

means for partitioning the plurality of peer nodes on the network into a set of one or more peer nodes inside the partition and a set of one or more peer nodes outside the partition, wherein peer nodes on opposite sides of the partition cannot communicate directly with each other on the network;

means for the peer nodes inside the partition to advertise themselves outside the partition; and

means for the peer nodes outside the mechanism to discover the advertised peer nodes inside the partition.

31. The peer computing system as recited in claim 30, wherein the partition is a firewall.

32. The peer computing system as recited in claim 30, wherein the partition is a Network Address Translation (NAT) gateway.

33. The peer computing system as recited in claim 30, further comprising means for relaying messages between the peer nodes outside the mechanism and the peer nodes inside the mechanism.

34. The peer computing system as recited in claim 33, wherein the means for relaying messages comprises a relay peer node, wherein the relay peer node comprises means for caching route information describing one or more routes to peer nodes on the network.

35. The peer computing system as recited in claim 34, wherein, to relay the messages between the peer nodes, the peer computing system further comprises means for using the cached route information to route the received message to the peer node outside the mechanism.

36. The peer computing system as recited in claim 33, wherein the message includes route information, and wherein, to relay the messages between the peer nodes, the relay peer further comprises means for using the route information included in the message to route the received message to the peer node outside the mechanism.

37. A method comprising:

a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, wherein peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism;

one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node;

the peer node outside the partitioning mechanism sending a message to the peer node inside the partitioning mechanism to the relay peer node; and

the relay peer node relaying the message to the peer node inside the partitioning mechanism.

38. The method as recited in claim 37, further comprising the relay peer node caching route information describing one or more routes to other peer nodes on the network, wherein the route information is configured for use in routing messages between peer nodes in the peer-to-peer environment.

39. The method as recited in claim 38, wherein the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes.

40. The method as recited in claim 38, further comprising:

the relay peer node receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and

the relay peer node sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

41. The method as recited in claim 37, wherein the message includes route information, and wherein, in said relaying the message, the method further comprises routing the message to the peer node inside the partitioning mechanism using the route information included in the message.

42. The method as recited in claim 41, wherein the route information includes an ordered sequence of peer identifiers.

43. The method as recited in claim 37, wherein the partitioning mechanism is a firewall.

44. The method as recited in claim 37, wherein the partitioning mechanism is a Network Address Translation (NAT) gateway.

45. A method comprising:

a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

wherein one or more of the plurality of peer nodes are relay peer nodes; and

one of the relay peer nodes caching route information describing one or more routes to other peer nodes on the network, wherein the route information is configured for use in routing messages between peer nodes in the peer-to-peer environment, and wherein the cached route information includes ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes.

46. The method as recited in claim 45, further comprising:

the relay peer node receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and

the relay peer node sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

47. The method as recited in claim 45, further comprising:

one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on the relay peer node, wherein the relay peer node is outside the partitioning mechanism, and wherein peer nodes inside

the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism;

one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node; and

the peer node outside the partitioning mechanism and the peer node inside the partitioning mechanism exchanging messages through the relay peer node.

48. The method as recited in claim 47, further comprising the relay peer node using the cached route information to route the messages to the destination peer node.

49. The method as recited in claim 47, wherein the partitioning mechanism is a firewall.

50. The method as recited in claim 47, wherein the partitioning mechanism is a Network Address Translation (NAT) gateway.

51. An article of manufacture comprising software instructions executable to implement:

a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on a relay peer node outside the partitioning mechanism, wherein peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism;

one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node;

the peer node outside the partitioning mechanism sending a message to the peer node inside the partitioning mechanism to the relay peer node; and

the relay peer node relaying the message to the peer node inside the partitioning mechanism.

52. The article of manufacture as recited in claim 51, wherein the software instructions are further executable to implement the relay peer node caching route information describing one or more routes to other peer nodes on the network, wherein the route information is configured for use in routing messages between peer nodes in the peer-to-peer environment.

53. The article of manufacture as recited in claim 52, wherein the software instructions are further executable to implement:

the relay peer node receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and

the relay peer node sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

54. The article of manufacture as recited in claim 51, wherein the message includes route information, and wherein, in said relaying the message, the software instructions are further executable to implement routing the message to the peer node inside the partitioning mechanism using the route information included in the message.

55. The article of manufacture as recited in claim 51, wherein the partitioning mechanism is a firewall.

56. The article of manufacture as recited in claim 51, wherein the partitioning mechanism is a Network Address Translation (NAT) gateway.

57. An article of manufacture comprising software instructions executable to implement:

a plurality of peer nodes implementing a peer-to-peer environment on a network according to a peer-to-peer platform, wherein the peer-to-peer platform comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

one or more of the plurality of peer nodes implementing a relay service in accordance with the peer-to-peer platform to perform as relay peer nodes; and

one of the relay peer nodes caching route information describing one or more routes to other peer nodes on the network, wherein the route information is configured for use in routing messages between peer nodes in the peer-to-peer environment, and wherein the cached route information includes

ordered sequences of peer identifiers configured for use in routing messages to destination peer nodes.

58. The article of manufacture as recited in claim 57, wherein the software instructions are further executable to implement:

the relay peer node receiving a query requesting route information to a peer node from another peer node, wherein the query is formatted according to an endpoint routing protocol; and

the relay peer node sending the requested route information to the requesting peer node in accordance with the endpoint routing protocol.

59. The article of manufacture as recited in claim 57, wherein the software instructions are further executable to implement:

one of the plurality of peer nodes inside a partitioning mechanism on the network publishing an advertisement on the relay peer node, wherein the relay peer node is outside the partitioning mechanism, and wherein peer nodes inside the partitioning mechanism cannot directly communicate with peer nodes outside the partitioning mechanism;

one of the plurality of peer nodes outside the partitioning mechanism discovering the advertisement to the peer node inside the partitioning mechanism on the relay peer node; and

the peer node outside the partitioning mechanism and the peer node inside the partitioning mechanism exchanging messages through the relay peer node.

60. The article of manufacture as recited in claim 59, wherein the software instructions are further executable to implement the relay peer node using the cached route information to route the messages to the destination peer node.

61. The article of manufacture as recited in claim 59, wherein the partitioning mechanism is a firewall.

62. The article of manufacture as recited in claim 59, wherein the partitioning mechanism is a Network Address Translation (NAT) gateway.

X. EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

XI. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.